Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Transition from TTY to Real-Time Text Technology	)	CG Docket No. 16-145
	)	
Petition For Rulemaking To Update The Commission's Rules For Access To Support The Transition From TTY To Real-Time Text Technology, And Petition For Waiver Of Rules Requiring Support Of TTY Technology	)	GN Docket No. 15-178

To: The Commission

REPLY COMMENTS OF
THE BOULDER REGIONAL EMERGENCY TELEPHONE SERVICE AUTHORITY

The Boulder Regional Emergency Telephone Service Authority ("BRETSA"), by its attorney, hereby submits it's Reply Comments on the Commission's December 16, 2016 Further Notice of Proposed Rulemaking in the above-referenced Docket ("FNPRM").

I. Termination of Backwards Compatibility of RTT With TTY.

In its July 22, 2016 Comments herein, at 3, BRETSA suggested that a provider be permitted to terminate support for TTY within a service area by demonstrating (i) that the provider does not offer *exchange* service, and (ii) the provider offers SMS text-to-911, RTT and/or other alternatives to TTY. This was based on the understanding that wireless services have been incapable of providing reliable 9-1-1 service, and that SMS text-to-911 and RTT provide the most reliable alternatives for deaf, hard-of-hearing and speech impaired populations ("Assistive Users") to reach 9-1-1.

In its February 22, 2017 Comments on the FNPRM, BRETSA stated that the sunset of the backwards compatibility requirement should be based upon the continuing level of use of

TTY, rather than the level of use of *RTT* as proposed by the Commission in the FNPRM. This is in recognition that Assistive Users may continue to use TTY even after the introduction of RTT, due to users' financial issues, greater comfort with the systems and devices they are accustomed to using than with new technologies and devices, learning disabilities, etc. BRETSA also noted in its Comments on the FNPRM that the Commission should consider the burden on RTT providers of continuing to supply backwards compatibility with TTY, along with other factors, in determining when to sunset the backwards compatibility requirements. The less the burden on providers continuing to supply backwards compatibility, the higher the hurdle should be to force Assistive Users still reliant on TTY to abandon their accustomed service and devices.

BRETSA also appreciates, however, that the premature sunsetting of these requirements will not only burden users, but also PSAPs including those which lack the resources available to BRETSA to implement end-to-end RTT solutions in the relatively near-term, and which may continue to rely on backwards compatibility of RTT for receipt of RTT 9-1-1 calls.[1]

Procedurally, BRETSA agrees with the recommendation of Hamilton Relay that the Commission should not establish a deadline of backwards compatibility with TTY of 2021, but rather should initiate a proceeding in 2021 to determine whether it is appropriate to terminate the backwards compatibility requirement.[2] That determination should be based upon an evaluation of (i) the status of RTT deployment, (ii) continued reliance on TTY by Assistive Users, and

[1] AT&T stated: "[I]t is reasonable to conclude that individual landline customers, commercial businesses, and government agencies will make an easier and swifter transition away from TTY than PSAPs, if for no other reason than the complexity of 911 systems. *Thus the Commission should consider a conservative date for sunsetting the obligation to support backward compatible RTT based upon the dates when PSAPs have transitioned to IP systems.*" July 11, 2016 Comments of AT&T, at 11 (Emphasis added).

[2] See Comments of Hamilton Relay, Inc. at 4.

BRETSA would add, (iii) continued reliance of PSAPs on TTY, and (iv) the ongoing burden on providers of continuing to supply the backwards compatibility with TTY.

CTIA supports the Commission's proposal to establish 2021 as the sunset date for RTT backwards compatibility with TTY.[3] It further proposes that the Commission establish clear parameters regarding how and when the Commission can extend the deadline, and that the Commission should make any determination of extension of the deadline at least 24 months in advance of the sunset date.[4] In support, CTIA discusses the length of time with which providers will have experience with providing and supporting RTT by 2021.

BRETSA supports CTIA's suggestion that at least two-years notice be provided prior to final termination of the requirement of RTT backwards compatibility with TTY, to give all parties adequate notice and time to prepare for such termination. This will include giving notice to remaining Assistive Users dependent on TTY of the effective deadline to transition to alternative communications technologies, services and/or devices. However BRETSA cannot support, and opposes, CTIA's proposal that the Commission must conclude just two years from now that extension of the backwards compatibility deadline is required, or allow the 2021 deadline to stand. Nor should the Commission be expected to predict what the state of facts will be two-years hence.

While providers may have the experience with providing and supporting RTT which CTIA describes by the *2021* deadline, they will not have such experience just two-years from now; in 2019 when CTIA would require the Commission to determine to extend the deadline, or

[3] CTIA Comments, at 3.
[4] *Id*., at 5.

allow the 2021 deadline to stand.[5] When the implementation of RTT in accordance with the Report and Order is *permissive*, as an alternative to providing direct CMRS TTY compatibility, there can be no assurance that carriers will promptly implement RTT, or implement RTT in a durable manner,[6] and thus have such experience.

Providers have stated that deployment of RTT requires coordination across a broad set of stakeholders that goes beyond wireless service providers and device manufacturers,[7] and have also argued for and been provided flexibility to develop innovative and diverse solutions.[8] These factors further making inappropriate a firm and inflexible deadline for sunsetting the backwards compatibility requirement.

More importantly, however, the experience of providers in supplying and supporting RTT experience is *not* the appropriate criteria for elimination of the backwards compatibility requirement. The appropriate criteria is the level of continued dependence of Assistive Users and PSAPs upon backwards compatibility of RTT with TTY, weighed against the burden on providers of continuing to provide such backwards compatibility.

Technology should serve the needs of people, rather than people serving technology. Forcing (i) all deaf, hard-of-hearing, speech-impaired and other individuals reliant on TTY, and

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[5] According to T-Mobile, some providers will first implement a downloadable over-the-top application as a stopgap measure prior to implementing full, native RTT. December 2, 2016 Ex Parte Notice of T-Mobile and CCA, at 2, https://ecfsapi.fcc.gov/file/120273792087/11-30-16%20T-Mobile%20and%20CCA%20RTT%20Ex%20Parte.pdf. It is unclear whether all providers will have experience supplying either a stopgap or a permanent, full native, RTT implementation of RTT by the time CTIA would have the Commission determine whether to extend the backwards-compatibility requirement, or even at the currently-proposed deadline for expiration of the requirement CTIA advocates. *See, also,* July 25, 2016 Reply Comments of AT&T, at 2, 4-6.

[6] See footnote 5, above. Experience providing and supporting over-the-top RTT applications may not be equivalent to supporting native, hardware/firmware-based, RTT implementations.

[7] July 25 2016 Reply Comments of CTIA, at 7.

[8] *See, e.g.*, July 11, 2016 Comments of CTIA at 8-19.

(ii) all PSAPs, to use the new technology whether or not they are prepared to do so, as soon as *providers* are practiced in supplying and supporting RTT, would place individuals and public safety agencies in the service of technology.[9] BRETSA notes that the Commission found in the Report and Order that "[n]o parties suggest that the costs of carrying out a backward compatibility requirement would be burdensome…." Report and Order, para 33 at 20.

While West suggested that the period of backward compatibility should be limited to avoid discouraging the transition to NG9-1-1,[10] delays in this transition are due more to budget constraints and the need for careful coordination, development of protocols and training to avoid 9-1-1 and emergency-response failures related to the transition. BRETSA submits that in the case of Colorado, continued claims by providers to the governor, legislature and PUC of Commission preemption of state oversight of 9-1-1 service and of IP-based 9-1-1 service, including aggregation and routing of 9-1-1 calls to PSAPs and outage reporting, has left uncertainty as to the authority of the agency with authority over 9-1-1 in Colorado to take actions necessary to deployment of NG9-1-1, and thus delayed transition to NG9-1-1.

West also stated that sunsetting of the backward compatibility requirement is necessary "to minimize the impact from TTY 911 failings on IP based systems," and "[t]he slow transmission speed and character conversion troubles associated with gateways between RTT systems and legacy TTYs."[11] However these would appear to be reasons *not* to permit use of backwards-compatible RTT as a substitute for TTY, or to permit PSAPs to elect whether to

[9] Wireline VoIP providers support TTY. While the Report and Order *permits* their permissive deployment of RTT in lieu of TTY, some such providers may decline to do so. Report and Order, at 5, 10. See, also, December 12, 2016 Ex Parte Notice of NCTA, https://ecfsapi.fcc.gov/file/12080479125892/120816%2016-145%2015-178%20ex%20parte.pdf; July 25, 2016 Reply Comments of AT&T, supra, at 9-10.
[10] July 11, 2016 Comments of West Safety Services, Inc., at 3.
[11] Id., at 4-5.

receive RTT messages via TTY interface or in block mode as text-to-911 messages. See section II, below.

T-Mobile urges adoption of a sunset on backwards compatibility of RTT with TTY because T-Mobile cannot commit to dedicating the networking resources devoted to the transcoding between TTY and RTT signals "forever," and that failure to adopt a sunset would drive carriers by necessity to use single provider, proprietary technologies to manage the resource load.[12] BRETSA does not propose that providers be required to supply RTT-TTY backwards compatibility in perpetuity. BRETSA proposes that in establishing the date for sunsetting of the backwards compatibility requirement, the Commission should consider the burden on providers in supplying backwards compatible RTT and balance it against the burden on Assistive Users and PSAPs of termination of backwards compatibility.[13] Greater specification of the continuing burdens on providers, and consideration of potential regulatory measures to address unreasonable pricing or other such measures by monopoly providers, would be necessary to this balancing of interests.

II. Mandatory RTT Features.

In its July 22, 2014 Comments in the above-captioned docket, BRETSA observed that the Commission appeared to propose inclusion in its "safe harbor" standard for RTT the panoply of features potentially available with RTT, which would be inconsistent with the customary understanding of a safe harbor standard. BRETSA does not believe that a safe harbor standard for RTT should be overly-inclusive, or intended as a panacea. While there is a tension between

[12] July 11, 2016 Comments of T-Mobile USA, Inc. at 11-12.
[13] As noted above, AT&T has stated that "[T]he Commission should consider a conservative date for sunsetting the obligation to support backward compatible RTT based upon the dates when PSAPs have transitioned to IP systems." July 11, 2016 Comments of AT&T, at 11 (Emphasis added).

the close coordination across a broad set of stakeholders that goes beyond wireless service providers and device manufacturers required for deployment of RTT,[14] and the flexibility and freedom to innovate sought by providers in this proceeding,[15] BRETSA recognizes the bias towards allowing and, in-fact, *encouraging* competitively-driven innovation to develop new and improved solutions and capabilities.

Nevertheless, the Commission should be alert that the needs of Assistive Users are not ignored. Assistive Users may not have significant market power. If greater rates-of-return may be realized from investments in services or features targeted for a different type of user, or larger subset of users, than investments in services to support Assistive Users, the corporate mandate to maximize shareholder wealth might require such alternative investments absent regulatory mandate. The Commission should not anticipate this result, but should be alert to it.

BRETSA *does* believe that block mode is an important feature of RTT, particularly in the context of 9-1-1. Block mode can allow PSAPs to provide complete instructions to an Assistive User at once, in logical units, and or in pre-scripted messages, to increase efficiency and minimize the opportunities for misunderstandings which could have tragic results. Defaulting to block mode during times of high call volume can allow PSAPs to better manage call volumes and emergencies, allowing them to review messages and prioritize those requiring emergency response, versus those which may, for example, report smoke from a forest fire to which units are already responding. It has been observed that block mode may be more compatible with moveable braille displays.[16]

[14] July 25, 2016 Reply Comments of CTIA, at 7.
[15] *See, e.g.*, July 11, 2016 Comments of CTIA at 8-19.
[16] Report and Order, fn 149 at 22.

BRETSA has also repeatedly raised before the Commission the concern that, based upon the only information it has received on the subject, the additional CMRS coverage achieved with control-channel based SMS text messaging will be significantly limited in the context of session-based text messaging such as emulated SMS in an LTE-IMS environment or RTT.[17] BRETSA is aware of rural and mountainous areas where SMS text-messaging is available but voice is not, and where use of SMS text-messaging in emergencies has saved lives. BRETSA is aware and has been made aware of situations in urban and suburban environments where SMS text-messaging is available in interior locations, but CMRS voice is not. When the Commission took up BRETSA's concern and asked CMRS providers to comment on how the deployment of their LTE networks would affect their text messaging coverage areas,[18] *no CMRS provider commented on the issue, and the Commission has not pursued the issue further.*

In its Comments herein, CTIA stated that "as RTT develops, SMS-to-911 may no longer be necessary to meet 9-1-1 obligations, and RTT and other network and service innovations should be permitted to satisfy Commission requirements for text-to-9-1-1." This appears a specific request for Commission authority to terminate true, control-channel based SMS text service.[19] For the reasons stated above, BRETSA believes this request and the termination of this service should be carefully considered, and should be based upon demonstration that termination of true, control-channel based SMS service will not reduce the overall coverage areas from which users can reach 9-1-1. Indeed, BRETSA believes (i) when RTT or any other text-

[17] See, e.g., February 23, 2016 Letter, Joseph P. Benkert to Adm. David Simpson (ret.), Chief, Public Safety & Homeland Security Bureau, at 4-6, https://ecfsapi.fcc.gov/file/60001516292.pdf.
[18] *Facilitating the Deployment of Text-to-911 and Other Next Generation 9-1-1 Applications (Second Report and Order and Third Further Notice of Proposed Rulemaking in PS Docket No. 11-153)*, 29 FCC Rcd 9846, n. 336 at 9899 (2014)("We seek comment on how the deployment of LTE networks by CMRS providers will affect their text messaging coverage areas.")
[19] Comments of CTIA, at 5.

messaging service with more limited coverage than SMS text-messaging cannot establish or maintain a connection with the provider, (ii) a connection is made with a user of a movable Braille device, (iii) a PSAP is in an overflow situation or (iv) needs to send instructions to a text-to-911 caller, or (v) a PSAP has elected to receive RTT messages in block mode form instead of TTY; *the messaging service should automatically fall-back to the more reliable/superior coverage true, control-channel based, SMS text-messaging service*. This would be consistent with CTIA's argument that "in cases where compliance with the Commission's 9-1-1 rules is not achievable for a particular 9-1-1 implementation, wireless providers and manufacturers should be permitted to rely on compliance with the text-to-911 rules, for example, through SMS-to-911, to meet their TTY 9-1-1 obligations."[20, 21]

III. Data Collection Requirements Associated With RTT Deployment.

CTIA simultaneously argues that the Commission should not impose reporting requirements on wireless providers and equipment manufacturers in order to track RTT deployment,[22] and that the Commission should encourage interested entities to provide sufficient data to justify any extension of the sunset date for backwards compatibility.[23] BRETSA fails to

[20] Comments of CTIA, at 4.

[21] In the event that consumer use of true, control-channel based SMS text-messaging has substantially declined and continued provision of such service by all providers represents an inefficient use of spectrum, BRETSA would support agreements among providers for joint provision of such service, provided that overall coverage is not diminished. The Commission has noted that true SMS text-messaging is capable of handling high volumes of messages when CMRS voice channels become overloaded, and it has been demonstrated that SMS coverage areas can significantly exceed CMRS coverage areas. See *Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, Framework for Next Generation 911 Deployment*, Notice of Proposed Rulemaking, PS Docket Nos. 11-153, 10-255, 26 FCC Rcd 13615, 13631-32, para. 41 (2011); Comments of the University of Colorado, Interdisciplinary Telecommunications Program, filed December 12, 2011 in PS Docket 11-153 at 3, 12 (Available at http://apps.fcc.gov/ecfs/comment/view?id=6016877949).

[22] Comments of CTIA, at 9.

[23] Comments of CTIA, at 10.

comprehend how the Commission can waive the requirement of CMRS compatibility with TTY on condition of deployment of RTT, without a showing by those taking advantage of the waiver that they have in-fact fulfilled the condition for such waiver. Moreover, where information relevant to the criteria for termination of the backward compatibility requirement is solely in the possession or control of CMRS providers, the Commission must assure that the CMRS providers produce such information under penalty of perjury. The Commission has adequate procedures for protection of proprietary data.

Finally, in its February 22, 2017 Comments, at 5-6, BRETSA discussed the importance of TRS, particularly in an NG9-1-1 environment when 9-1-1 calls could be simultaneously connected to a PSAP and TRS when an Assistive User dialed 9-1-1, based upon the user's phone profile. While NG9-1-1 is not ubiquitously available, BRETSA respectively questions whether this capability could be deployed in OSP networks pending ubiquitous deployment of NG9-1-1.

Respectfully submitted,

BOULDER REGIONAL EMERGENCY TELEPHONE SERVICE AUTHORITY

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